IN THE CLAIMS

1. (currently amended) An electrochemical biosensor, comprising:

an insulating ~~base plate~~ substrate;

a layer of electrically conductive wires disposed on said insulating ~~base plate~~ substrate;

an electrode layer comprising a plurality of electrodes ~~having~~ including a reference electrode and at least one electrode, and at least two contact ports ~~being~~ adapted to connect to a measuring device, said electrode layer ~~and~~ being disposed ~~formed~~ on said layer of electrically conductive wires ~~by screen printing~~ except for said reference electrode;

a middle insulating layer ~~being applied~~ disposed on ~~said conductive wire and containing~~ said electrode layers without covering said electrodes and said contact ports, said middle insulating layer ~~comprising an opening~~ having a slot ~~formed~~ therein~~, and said opening being opposed~~ above ~~to~~ said electrodes ~~of said insulating base plate~~;

an active reaction layer having substances of reactant, reaction catalyst, mediator and surfactant spread ~~between the starting point of said opening and~~ on the surface of said electrodes and defining an electrode reaction area; and

an upper cover adhered to said middle insulating layer,

said upper cover having ~~opposing to~~ an upwardly extended closed ~~space~~ chamber ~~formed within said insulating layer~~ therein containing said substances, said chamber being disposed above and ~~being~~ in ~~contact~~ communication ~~above~~ with one end of said ~~insulating layer~~ slot, said ~~opening~~ slot ~~forming~~ defining a capillary inflow channel ~~area and said closed space being positioned opposing to one end of the inflow area~~ to enable a sample of said substances to be rapidly introduced into and fill said electrode reaction area by capillary action upon

contact with a front tip of said capillary inflow channel, said slot being configured to form said sample such that the sample does not extend beyond said chamber along said capillary inflow channel.

2. (currently amended) The electrochemical biosensor according to claim 1, wherein said biosensor is a bi-electrode system and said at least one electrode ~~comprising~~ is a working electrode ~~and a reference electrode~~.

3. (currently amended) The electrochemical biosensor according to claim 1, wherein said biosensor is a tri-electrode system and said at least one electrode ~~comprising~~ includes a working electrode~~, a reference electrode~~ and an auxiliary electrode.

4. (cancelled)

5. (currently amended) The electrochemical biosensor according to claim 1, wherein said ~~opening~~ slot is T-shaped.

6. (currently amended) The electrochemical biosensor according to claim 1, wherein ~~the~~ said insulating ~~base plate~~ substrate is made of material selected from the group consisting of polycarbonate, polyester, polyether, nylon, polyurethane, polyimide, polyvinylchloride (PVC), glass, glass fibre plate, ceramics and polyethylene terephthalate (PET).

7. (currently amended) The electrochemical biosensor according to claim 1, wherein said layer of electrically conductive wires is made of silver.

8. (currently amended) The electrochemical biosensor according to claim 1, wherein said layer of electrically conductive wires is made of silver chloride.

9. (currently amended) The electrochemical biosensor according to claim 1, wherein said layer of electrically conductive wires is made of gold.

10. (currently amended) The electrochemical biosensor according to claim 1, wherein said electrode layer is made of carbon.

11. (currently amended) The electrochemical biosensor according to claim 1, wherein said electrode layer is made of silver.

12. (currently amended) The electrochemical biosensor according to claim 1, wherein said electrode layer is made of gold.

13. (currently amended) The electrochemical biosensor according to claim 1, wherein said electrode layer is made of platinum.

14. (currently amended) The electrochemical biosensor according to claim 1, wherein said reaction catalyst is a bio catalyst.

15. (cancelled)

16. (currently amended) The electrochemical biosensor according to claim 14, wherein said bio catalyst is an enzyme.

17. (original) The electrochemical biosensor according to claim 1, wherein the thickness of said middle insulating layer is between 20 and 400 μm.

18. (original) The electrochemical biosensor according to claim 1, wherein the thickness of said middle insulating layer is between 50 and 200 μm.

19. (currently amended) The electrochemical biosensor according to claim 4, wherein the length and width of said ~~opening~~ slot is between 2 and 8 mm and between 0.5 and 5 mm, respectively.

20. (currently amended) The electrochemical biosensor according to claim 5, wherein the length and width of said ~~opening~~ slot is between 2 and 8 mm and between 0.5 and 5 mm, respectively.

21. (currently amended) The electrochemical biosensor according to claim 1, wherein the volume of said closed ~~space~~ chamber ~~opposing to said middle insulating layer~~ is between 0.5 and 4 μl.

22. (currently amended) The electrochemical biosensor according to claim 3, wherein said sample can be ~~filled and~~ detected when it is introduced above said working electrode and said auxiliary electrode.

23. (currently amended) The electrochemical biosensor according to claim 1, wherein said biosensor contains a device activation line which can activate ~~the~~ said measuring device automatically.

Claims 24-26 canceled

27. (currently amended) A method of fabricating an electrochemical~~ly fabricating~~ biosensor, comprising the steps of:

forming a layer of electrically conductive wires on a substrate by screen printing which then ~~being~~ is dried between 40°C and 120°C;

forming an electrode layer on top of ~~the~~ said layer of electrically conductive wires by screen printing and drying ~~the~~ said substrate between 40°C and 120°C;

forming a middle insulating layer with a ~~U-shaped opening~~ slot formed therein above said electrode layer ~~the substrate by screen printing~~, wherein ~~the~~ a working electrode, ~~the~~ a reference electrode and ~~the~~ an auxiliary electrode are confined within ~~the~~ said ~~U-shaped opening~~ slot and the ~~opposing~~ opposite ends of said electrodes are exposed to make ~~keep~~ contact with ~~the~~ a measuring device;

applying an active reaction layer on said ~~U-shaped opening~~ slot;

adhering an upper cover formed with an opening ~~formed~~ therein above ~~the~~ said middle insulating layer, wherein said opening is positioned at one end of said ~~U-shaped opening~~ slot; and

applying a surface layer above said upper cover,

wherein said opening defines a closed chamber within said upper cover above and in communication with one end of said slot, said slot defining a capillary inflow channel such that a sample of substance in said closed chamber can be rapidly introduced into and fill said electrode layer by capillary action upon contact of the substance with a front tip of said capillary inflow channel, and said sample is configured by said slot not to go from said chamber beyond said capillary inflow channel.

28. (currently amended) The method of claim 27, wherein ~~the~~ said middle insulating layer ~~can be~~ is formed on top of said electrode layer by ~~adhesion instead of~~ screen printing.

29. (currently amended) The method of claim 27, wherein said ~~U-shaped opening~~ slot ~~can be replaced by~~ is a T-shaped ~~opening~~ slot and the transverse opening of said T-shaped ~~opening~~ slot forms two air vents on ~~opposing~~ opposite sides of said biosensor.

30. (new) The method of claim 27, wherein said middle insulating layer is formed on top of said electrode layer by adhesion.

31. (new) The electrochemical biosensor according to claim 1, further comprising a thin plate disposed on top of said upper cover.